



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,725	05/08/2001	Bernard Yeh	042390.P11508	3637

7590

04/15/2005

Crystal D. Sayles
c/o BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025

EXAMINER

BENGZON, GREG C

ART UNIT

PAPER NUMBER

2144

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,725	YEH ET AL.	
	Examiner	Art Unit	
	Greg Bengzon	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2144

DETAILED ACTION

This application has been examined. Claims 1-26 are pending . Claims 1-5, 7-13, 15-19, 21-22 have been amended. Claims 23-26 have been submitted as new claims.

Priority

No claim priority has been made in this application.

The effective filing date for the subject matter defined in the pending claims in this application is 5/8/2001.

Response to Arguments

The Examiner's objections to the Drawings are withdrawn.

Applicant's arguments filed January 18, 2005 , with respect to the rejection(s) of Claims 1-22 have been fully considered. Therefore, the rejection(s) has been withdrawn. However, upon further consideration of the amended and new Claims, new ground(s) of rejection are made in view of newly found prior art references.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9-14, 17-20 (as amended) are rejected under 35 U.S.C. 103(e) as being unpatentable over Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of Yu (US Patent 5636371).

With respect to Claims 1-6, 9-14, 17-20, Fletcher substantially discloses the features and limitations as described by the Applicant.

With respect to Claims 1, 3, 9, 11, and 17 Fletcher discloses the method, set of instructions, and system for testing a computer system to be operated in a multi-computer environment, comprising: executing server code at a computer system under test; executing client code at said computer system under test; and calculating performance data for said computer system under test. Furthermore, Fletcher discloses the method, set of instructions, and system for testing a computer system to be operated in a multi-computer environment, comprising: executing server code at a

Art Unit: 2144

computer system under test according to a multicomputer communication protocol; executing client code on said computer system under test according to said multicomputer communication protocol; and calculating performance data for said computer system under test operating as one of a server and a client. (See Fletcher Column 3 Lines 30-60, Figure 1 Column 5 Lines 15-50, Figure 2 Column 5 Lines 55-67).

With respect to Claims 2 and 10, Fletcher discloses the method and set of instructions of Claims 1 and 9 for tracking an execution time for each of said threads by a processor in said computer system under test; and tracking a number of transactions completed between the execution of server code and the execution of client code wherein said performance data is based on said number of transactions completed over a period of time. (See Fletcher Column 20, Lines 30-60, Column 23 Lines 45-65, Column 24 Lines 1-67).

With respect to Claims 4, 12 and 18, Fletcher discloses the method, set of instructions and system of Claims 3, 11, and 17 wherein said server code and client code includes a number of threads, the method further comprising: tracking an execution time for each of said threads by a processor in said computer system under test. (See Fletcher Column 20, Lines 30-60, Column 23 Lines 45-65, Column 24 Lines 1-67).

Art Unit: 2144

With respect to Claims 5, 13, and 19, Fletcher discloses the method, set of instructions and system of Claims 4, 12, and 18 wherein said multicomputer communication protocol defines transactions between said server and said client, the method further comprising: tracking a number of transactions completed between the execution of server code and the execution of client code. (See Fletcher Column 20, Lines 30-60, Column 23 Lines 45-65, Column 24 Lines 1-67).

With respect to Claims 6, 14 and 20, Fletcher discloses the method, set of instructions and system of Claims 5, 13, and 19 wherein said performance data is based on said number of transactions completed over a period of time. (See Fletcher Column 24, Lines 5-18, Lines 30-50)

However, Fletcher does not disclose a single computer system emulating a server and a client, said computer executing server code and also executing client code.

Yu discloses of a virtual network mechanism that allows a single host system to emulate multiple server and client processes, allowing data to be passed between said processes, and executing server and client code in the same said host system. (Column 4 Lines 1-25, Column 5 Lines 1-25, Column 8 Lines 1-25)

Fletcher and Yu are analogous art because they teach concepts and practices regarding capture of data between server and client processes and execution of said server and client processes. The Examiner respectfully suggests that it would have

Art Unit: 2144

been obvious to a person of ordinary skill in the art to combine the teachings of Yu into Fletcher, such that the Fletcher is able to 1) emulate server and client processes in the same single host computer system and 2) execute both server code and client code in the said host computer. The suggested motivation for doing so would have been, as Yu suggests, to eliminate the need to 1) specify additional protocol stacks and 2) provide additional communication hardware facilities for the handling multiple instances of application programs. (Abstract)

Therefore it would have been obvious to combine the teachings of Yu into the method and system of Fletcher in order to obtain the invention as described in Claims 1-6, 9-14, 17-20.

Claims 7, 15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of Yu (US Patent 5636371), as applied to Claims 1-6, 9-14, 17-20 above, further in view of Cota-Robles (US PG Publication 2001/0056456).

With respect to Claims 7, 15, and 21, the combined teachings of Fletcher and Yu substantially disclose the method, set of instructions and system of Claims 6, 14, and 20 wherein said performance data is based on said number of transaction completed over said period of time. (See Fletcher Column 24, Lines 5-18, Lines 30-50, Column 25 Lines 1-45)

However the combination of Fletcher and Yu does not disclose any teachings regarding a scaling factor and said performance data being modified by a scaling factor.

Cota-Robles discloses a scaling factor that is calculated and applied as a characteristic or 'execution state indicator' or 'dynamic priority indicator' of a thread process. The scaling factor can be calculated as a positive scaling factor or a negative scaling factor, depending on the performance data measurements taken for a particular thread. (Page 2 Paragraph 13, Page 3 Paragraph 33, Page 5 Paragraphs 54-56).

Fletcher, Yu and Cota-Robles are analogous art because they are presenting solutions for measuring thread execution data and using the performance data for calculations that describe characteristics of thread execution dynamics in a computer system environment.

The Examiner respectfully suggests that at the time of the invention it would have been obvious to a person of ordinary skill in the art to apply the concept of a scaling factor taught by Cota-Robles and use the scaling factor to modify the performance data measured by the combination of Fletcher and Yu .

The suggested motivation for doing so would have been, as suggested by Cota-Robles , to overcome the limitations of single context processors which execute instructions from one thread at a time, wherein priority-based scheduling algorithms unambiguously determine when and under what circumstances different threads access the processor. (Page 2 Paragraph 23) Furthermore it would have been obvious

Art Unit: 2144

combine in order to present a logical means for comparing performance testing results with relative atomicity, consistency, and isolation. Furthermore the scaling factor allows the test conditions to be adjusted accordingly in order to simulate or predict performance under other testing scenarios.

Therefore it is respectfully suggested that it would have been obvious to combine the teachings of Cota-Robles with the combined method, set of instructions and system described by Fletcher and Yu for the benefit of accurate and beneficial performance testing data to obtain the invention as specified in Claims 7, 15, and 21.

Claims 8,16, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of Yu (US Patent 5636371), as applied to Claims 1-6, 9-14,17-20 above, further in view of Cota-Robles (US PG Publication 2001/0056456).

With respect to Claims 8,16, and 22, the combined teachings of Fletcher and Yu substantially disclose the method, set of instructions and system of Claims 7, 15, and 21 as described the rejection for Claims 7, 15, and 21. Fletcher discloses measuring the total execution time for both client and server threads (Column 7 Lines 5-67, Column 8 Lines 25-30) and measuring one of an execution time for said server threads and an execution time for said client threads (Column 20 Line 30-60).

However the combination of Fletcher and Yu does not disclose any teachings regarding a scaling factor, where said scaling factor is a total execution time for both client and server threads divided by one of an execution time for said server threads and an execution time for said client threads.

Cota-Robles discloses a scaling factor that is calculated and applied as a characteristic or 'execution state indicator' or 'dynamic priority indicator' of a thread process. The scaling factor can be calculated as a positive scaling factor or a negative scaling factor, depending on the performance data measurements taken for a particular thread. (Page 2 Paragraph 13, Page 3 Paragraph 33, Page 5 Paragraphs 54-56). Cota-Robles teaches of a scaling function having linear dependencies wherein said scaling function is expressed as a ratio between a sum of the total occurrence for a unit of measurement data and a singular occurrence of a unit of measurement data. (Page 5 Paragraphs 49-50)

Fletcher, Yu and Cota-Robles are analogous art because they are presenting solutions for measuring thread execution data and using the performance data for calculations that describe characteristics of thread execution dynamics in a computer system environment.

The Examiner respectfully suggests that at the time of the invention it would have been obvious to a person of ordinary skill in the art to apply the concept of a scaling factor as taught by Cota-Robles, determine a suitable scaling function, calculate the scaling factor and use the scaling factor to modify the performance data measured by the combination of Fletcher and Yu. The scaling function can be expressed as a ratio

Art Unit: 2144

between the total execution time for both client and server threads divided by one of an execution time for said server threads and an execution time for said client threads.

The suggested motivation for doing so would have been, as suggested by Cota-Robles , to overcome the limitations of single context processors which execute instructions from one thread at a time, wherein priority-based scheduling algorithms unambiguously determine when and under what circumstances different threads access the processor. (Page 2 Paragraph 23) Furthermore the combination would have been obvious in order to present a logical means for comparing performance testing results with relative atomicity, consistency, and isolation. Furthermore the scaling factor allows the test conditions to be adjusted accordingly in order to simulate or predict performance under other testing scenarios.

Therefore it is respectfully suggested that it would have been obvious to combine the teachings of Cota-Robles with the method, set of instructions and system described by Fletcher for the benefit of accurate and beneficial performance testing data to obtain the invention as specified in Claims 8,16, and 22.

Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of Yu (US Patent 5636371), as applied to Claims 1-6, 9-14,17-20 above, further in view of Cota-Robles (US PG Publication 2001/0056456).

With respect to Claim 23 and 25, the combination of Fletcher and Yu discloses the methods of Claim 1 and set of instructions for Claim 9, wherein said server code comprises a number of server threads, and said client code comprises a number of client threads. (Column 23 Lines 30-40)

However the combination of Fletcher and Yu does not disclose of executing scheduler code, said scheduler code comprising a number of scheduler threads, said scheduler threads for coordinating communications of data between said client threads and said server threads.

With respect to Claims 24 and 26, the combination of Fletcher and Yu does not disclose the methods of Claim 23 and set of instructions for Claim 25, wherein executing said scheduler code includes interfacing with a queue to store data packets to be transferred to a client thread or a server thread.

Cota-Robles discloses of a simultaneous multi-threaded architecture that combines operating system (OS) priority information with thread execution heuristics to provide dynamic priorities for selecting thread instructions for processing. The OS can schedule multiple threads belonging to different applications such as server or client applications onto an SMT processor concurrently. (Page 2 Paragraph 23-27). In a disclosed embodiment the SMT processor uses instruction queues for storing data

Art Unit: 2144

according to which execution unit is necessary to implement the thread. (Page 3 Paragraph 35-37)

Fletcher, Yu and Cota-Robles are analogous art because they are presenting solutions for measuring thread execution data and using the performance data for calculations that describe characteristics of thread execution dynamics in a computer system environment.

The Examiner respectfully suggests that it would have been obvious to a person of ordinary skill in the art to implement a thread scheduler as taught by Cota-Robles into the combination of Fletcher and Yu , such that the scheduler is able to 1) recognize and reassign the priorities of the server threads and the client threads for maximum efficiency and throughput and 2) transfer the necessary data to the server or client thread in order to complete execution of the thread. The suggested motivation for doing so would have been, as Cota-Robles suggests, overcome the limitation of single context processors which execute instructions from one thread at a time. (Page 2 Paragraph 23)

Therefore it is respectfully suggested that it would have been obvious to combine the teachings of Cota-Robles with the combined method, set of instructions and system described by Fletcher and Yu in order to obtain the invention as specified in Claims 23-26.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to the enclosed PTO-892 form for details.

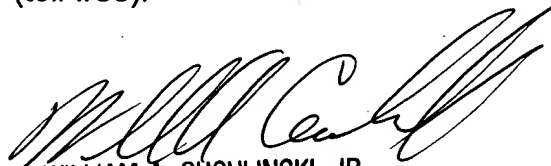
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

Art Unit: 2144

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on (571) 272-3925. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GCB



WILLIAM A. CUCHLINSKI, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100